

REMARKS

Claims 1, 3-5, 7-11, 14, 15, 17-21, 24-26, 28-32 and 35 were rejected under 35 USC § 102(b) as being anticipated by Belding et al. (5,685,897); col. 4, lines 26-36; col. 5, lines 36-41; col. 7, lines 26-34; claim 17).

By this amendment, all of the independent claims are now required to have an average particle size in a range of from 0.001 to less than 0.1 micrometers. As pointed out on page 8, lines 14-21, by having this particle size the moisture absorbing rate is enhanced thereby providing low equilibrium minimum humidity within the enclosure. The present invention has recognized that by having nanometer size water absorbing particles, significant advantages can be achieved. Applicants believe they are the first to recognize the feature of having such reduced particle size to enhance the effectiveness of the desiccant.

Turning first to Belding et al., the Examiner should note that their particle size ranges from 0.1 to 50 microns. Clearly, the Belding et al. range is outside the range specified by the amended independent claims in this case. There is nothing in Belding et al. that would suggest that by using reduced nanometer size water absorbing particles, advantages can be achieved. Belding et al.'s desiccants include a zeolite, silica gel, or halogen salts. At the outset, Applicants note that zeolite can indeed maintain humidity levels less than 100 ppm, but they are very inefficient and there would have to be a significant amount of zeolite. Applicants do not believe that silica gel can maintain humidity levels less than 100 ppm. Some halogen salts can maintain that amount. There is nothing in Belding et al. which would suggest that any of their materials should be within the claimed nanometer particle size range. In fact, the way zeolites works is that the majority of their surface area is internal to the particle and there would be no motivation to reduce the particle size to increase this surface area. Applicants believe there was no motivation to provide such size range found in the Belding et al. patent. Accordingly, it is believed that amended independent claims 1, 5, 15, and 25 all set forth unobvious subject matter and should be allowable.

Claims 2, 6, 16 and 27 were rejected under 35 USC § 103(a) as being unpatentable over Belding et al. ('897) in view of EP 0776147 (col. 5, lines 37-57).

Belding et al. has been discussed above. EP 0776147 in column 5, lines 37-57 discuss the fact that alkaline metal oxides, alkaline earth metal oxides, sulphates, metal halides, and perchlorates can be used. However, there is no discussion or suggestion that any materials should be in the nanometer particle size range to improve their efficacy. Accordingly, assuming for the sake of argument only that Belding et al. and EP 0776147 could be combined, there would still be no suggestion of the nanometer particle size range set forth in all the claims in this case.

Claims 12, 22 and 33 were rejected under 35 USC § 103(a) as being unpatentable over Belding et al. ('897) in view of Levinson et al. (5,384,357; abstract; col. 2, lines 49-56).

Here again, Belding et al. has been discussed above. Levinson et al., in their abstract, set forth that infrared radiation curable organo polysiloxane composition can be used as a binder for a desiccant, such as a zeolite. Applicants fail to see how this reference provides any motivation for the claimed nanometer particle size range. Levinson et al. merely disclose a binder suitable for zeolite. It is, indeed, a radiation curable binder, but claims 12, 22, and 33 all depend upon independent claims which include the unobvious nanometer particle size range. Accordingly, these claims should also be allowable.

Claims 13, 23 and 34 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since claims 13, 23, and 34 depend upon amended base claims, which now are believed to be allowable, they also should be allowable.

It is believed that these changes now make the claims clear and definite and, if there are any problems with these changes, Applicants' attorney would appreciate a telephone call.

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this

application is believed to be in condition for allowance, the notice of which is respectfully requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with Markings to Show Changes Made**".

Respectfully submitted,



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Enclosure



Version With Markings To Show Changes Made

In the Claims:

Claim 1 has been amended as set forth below:

1. (Once Amended) A desiccant package useable for protecting highly moisture-sensitive electronic devices sealed within an enclosure, comprising:
 - a) a moisture-permeable container which can be positioned in the sealed enclosure;
 - b) solid water absorbing particles of one or more materials disposed in the moisture-permeable container;
 - c) said solid water absorbing particles including solid particles of one or more materials, at least one of such materials having an average particle size in a range of 0.001 to less than 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which the device is sensitive within the sealed enclosure; and
 - d) said moisture-permeable container essentially maintains the moisture absorption rate of the solid water absorbing particles contained therein, the moisture-permeable container acting to separate the solid water absorbing particles from the highly moisture-sensitive device.

Claim 5 has been amended as set forth below:

5. (Once Amended) A desiccant package useable for protecting highly moisture-sensitive electronic devices sealed within an enclosure, comprising:
 - a) solid water absorbing particles of one or more materials in a moisture-permeable binder;
 - b) said solid water absorbing particles including solid particles of one or more materials, at least one of such materials having an average particle size in a range of 0.001 to less than 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower

than a humidity level to which the device is sensitive within the sealed enclosure; and

c) said binder being adapted to essentially maintain or enhance the moisture absorption rate of the solid water absorbing particles contained therein, the binder being in solid or liquid phase or dissolved in a liquid.

Claim 15 has been amended as set forth below:

15. (Once Amended) A desiccant useable for protecting highly moisture-sensitive electronic devices sealed within an enclosure, comprising:

a) solid water absorbing particles of one or more materials in a moisture-permeable binder on a support;

b) said solid water absorbing particles including solid particles of one or more materials, at least one of such materials having an average particle size in a range of 0.001 to less than 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which the device is sensitive within the sealed enclosure; and

c) said binder being adapted to reduce degradation of or enhance the moisture absorption rate of the solid water absorbing particles contained therein, the binder being in solid or liquid phase or dissolved in a liquid.

Claim 25 has been amended as set forth below:

25. (Once Amended) A desiccant, comprising material including at least in part solid particles of one or more materials, at least one of such materials having an average particle size in a range of 0.001 to less than 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which a highly moisture sensitive electronic device is sensitive within a sealed enclosure.